

In re: Chockalingam Arunachalam

Filed: August 30, 2001

Serial No.: 09/943,587

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AMENDMENT TO CLAIMS

Listing of Claims:

1. (Presently Amended) A system for providing interactive data exchange between a plurality of outside parties utilizing a plurality of telephone apparatus and a call center including an interactive voice response unit (IVR), at least one operator terminal, and at least one database, said system responsive to telephone signals received from said plurality of telephone apparatus, for converting at least a portion of said received telephone signals into data signals, said data signals facilitating interactive data exchange between each of said plurality of outside parties utilizing said plurality of outside telephone apparatus and said at least one database, said IVR providing human recognizable audio output signals to said plurality of outside parties in response to data provided by said at least one data base and said telephone signals received from said plurality of outside telephone apparatus, and for storing a plurality of interactive data exchange records, each of said interactive data exchange records representing at least a portion of the interactive data exchange between one of said plurality of

outside parties and said at least one data base, said system comprising:

a voice path switch, responsive to said IVR and to said telephone signals, for selectively connecting said telephone signals received from said plurality of outside parties utilizing said plurality of outside telephone apparatus to at least one of said operator terminals and said IVR dependent upon whether operator assistance is required for each of said plurality of outside parties;

means for populating an automatic number identifier (ANI) for each outside call without an associated ANI, said populated ANI includes ~~with a telephone number or extension of a port that received the telephone signal, handled by said IVR not having an ANI and associating said ANI with each outside call therewith;~~

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a voice response unit interface for receiving the automatic number identifier ~~(ANI)~~ for each outside call handled by said IVR along with at least a portion of said plurality of interactive data exchange records exchanged between said outside party and said IVR, said voice response unit interface including memory for storing said received interactive data exchange records and a lookup table for storing each said received ANI associated with

each outside call handled by said IVR;

at least one queue, for storing at least calls handled by said IVR; and

a data controller, responsive to said queue and said voice response unit interface, for identifying an ANI for each call identified in said specified queue, for comparing each said identified ANI with the ANIs stored in the voice response unit interface lookup table, for retrieving said collected data associated with an ANI stored in said voice response unit interface, and for providing said retrieved data to at least one operator terminal assigned to handle said outside call.

2. (Original) The system of claim 1, wherein said voice response unit includes said at least one database.

3. (Original) The system of claim 1, wherein said voice response unit and said voice response unit interface share a common database.

4. (Original) The system of claim 1 further including at least one host system including said at least one database.

5. (Original) The system of claim 4, wherein said voice response unit receives said data from said at least one host system.

6. (Original) The system of claim 1, wherein said voice path switch includes a private branch exchange (PBX).

7. (Original) The system of claim 1, wherein said voice response unit includes said voice path switch.

8. (Presently Amended) A method of providing interactive data exchange between a plurality of outside parties utilizing a plurality of telephone apparatus, a voice response system, at least one operator terminal, and at least one database, said method comprising the steps of:

connecting an outside telephone apparatus to an interactive voice response unit (IVR) and receiving telephone signals, at said IVR, from said plurality of outside telephone apparatus and for converting at least a portion of said received telephone signals into data signals, said data signals facilitating interactive data

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exchange between each of said plurality of outside parties
utilizing said plurality of outside telephone apparatus and said
at least one database;

providing human recognizable audio output signals by said IVR
to said plurality of outside parties in response to data provided
by said at least one data base and said telephone signals received
from said plurality of outside telephone apparatus;

DI storing a plurality of interactive data exchange records,
each of said interactive data exchange records representing at
least a portion of the interactive data exchange between one of
said plurality of outside parties and said at last one data base;

selectively connecting said telephone signals received from
said plurality of outside parties utilizing said plurality of
outside telephone apparatus to at least one of said operator
terminals and said voice response unit dependent upon whether
operator assistance is required for each of said plurality of
outside parties;

populating an automatic number identifier for each outside
call without an associated ANI, said populated ANI includes, ~~with~~
a telephone number or extension of a port that received the
telephone signal, ~~handled by the IVR not having an ANI and~~

associating said ANI with each outside call ~~therewith~~;

receiving the automatic number identifier (ANI) for each outside call handled by said IVR along with at least a portion of said plurality of interactive data exchange records exchanged between said outside party and said IVR;

storing said received interactive data exchange records in a voice response unit interface memory, including a lookup table for storing each said received ANI associated with each outside call handled by said IVR;

holding calls handled by said IVR in at least one queue until a voice path is established between a held call and at least one operator terminal;

identifying an ANI for each call held in said specified queue and comparing each said identified ANI with the ANIs stored in the voice response unit interface lookup table; and

retrieving said collected data associated with a stored ANI, and for providing said retrieved data to said at least one operator terminal assigned to handle said outside call.

9. (Presently Amended) A system for providing interactive data exchange between an outside party making a telephone call and

a call center, comprising:

means for populating an Automatic Number Identifier (ANI) for an incoming telephone call without an associated ANI, said populated ANI includes, ~~with a telephone number or extension of a port that received the telephone signal, having no ANI associated therewith~~ and associating said ANI with each outside call ~~therewith;~~

means for identifying the ~~Automatic Number Identifier (ANI)~~ associated with an incoming telephone call;

D1 means for selectively connecting the incoming telephone call to an interactive voice response unit (IVR) and a voice path switch;

a data switch controller;

an IVR in communication with ANI means and including means for receiving a telephone signal from an incoming telephone call;

a database capable of generating data signals, in communication with the IVR;

an IVR interface in communication with the IVR and to the data switch controller, the IVR interface comprising a memory for storing at least a portion of the data signals and a lookup table for storing the ANI;

an operator terminal in communication with the data switch controller;

a voice path switch in communication with the operator terminal, the IVR, the ANI means, and the data switch controller and responsive to the data switch controller for switching calls between the IVR and the operator terminal.

10. (Original) The system of claim 9, wherein the IVR includes the database.

11. (Original) The system of claim 9, wherein the IVR and the IVR interface share a common database.

12. (Original) The system of claim 9 further including at least one host system including a database.

13. (Original) The system of claim 12, wherein the IVR receives data from the host system.

14. (Previously Amended) The system of claim 9 wherein the voice path switch comprises a queue for holding the telephone call

prior to transferring the call to the operator terminal.

15. (Original) The system of claim 14 wherein the data switch controller monitors the queue.

16. (Original) The system of claim 15 wherein the IVR comprises a first ANI means and the data switch controller comprises a second ANI means.

17. (Original) The system of claim 9, wherein the means for selectively connecting the incoming telephone call to an interactive voice response unit (IVR) or a voice path switch is a second voice path switch;

18. (Original) The system of claim 9, wherein IVR comprises the means for selectively connecting the incoming telephone call to an interactive voice response unit (IVR) or a voice path switch.

19. (Presently Amended) A method of providing interactive data exchange in a call center, said method comprising the steps

3 of:

4 connecting a telephone call from an outside telephone
5 apparatus to an interactive voice response unit (IVR) and a
6 database;

7 ✓populating an automatic number identifier (ANI) for each
8 outside call without an associated ANI, said populated ANI
9 includes ~~with~~ a telephone number or extension of a port that
10 received the telephone signal, handled by the IVR ~~not having an~~
11 ~~ANI~~ and associating the ANI ~~therewith~~ with each outside call;

12 ✓conducting interactive data exchange between the outside
13 telephone apparatus and the database;

14 ✓identifying an automatic number identifier (ANI) for the
telephone call;

storing at least a portion of the interactive data exchange
in association with the ANI for the telephone call;

✓transferring the telephone call to a queue in a voice path
switch;

identifying the ANI for the telephone call in the queue;

transferring the telephone call to an operator terminal; and
transmitting to the operator terminal the stored data exchange
associated with the ANI.

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new call ?